

TABLE 519.1.2—THERMOSTAT SETTINGS FOR MULTI-FAMILY HIGH-RISE RESIDENTIAL BUILDINGS

Time of day	Single zone dwelling unit		Two zone dwelling unit			
	Heat	Cool	Bedrooms/bathrooms		Other rooms	
			Heat	Cool	Heat	Cool
Midnight–6 a.m. ....	60	78	60	78	60	85
6 a.m.–9 a.m. ....	70	78	70	78	70	78
9 a.m.–5 p.m. ....	70	78	60	85	70	78
5 p.m.–11 p.m. ....	70	78	70	78	70	78
11 p.m.–Midnight ....	60	78	60	78	60	78

**§ 434.520 Speculative buildings.**

520.1 Lighting. The interior lighting power allowance (ILPA) for calculating the Energy Cost Budget shall be determined from Table 401.3.2a. The Design Energy Consumption may be based on an assumed adjusted lighting power for future lighting improvements.

520.2 The assumption about future lighting power used to calculate the Design Energy Consumption must be documented so that the future installed lighting systems may be in compliance with these standards. Documentation must be provided to enable future lighting systems to use either the Prescriptive method or the Systems Performance method of subsection 401.3.

520.3 Documentation for future lighting systems that use subsection 401.3 shall be stated as a maximum adjusted lighting power for the tenant spaces. The adjusted lighting power allowance for tenant spaces shall account for the lighting power provided for the common areas of the building.

520.4 Documentation for future lighting systems that use subsection 401.3 shall be stated as a required lighting adjustment. The required lighting adjustment is the whole building lighting power assumed in order to calculate the Design Energy Consumption minus the ILPA value from Table 401.3.2c that was used to calculate the Energy Cost Budget. When the required lighting adjustment is less than zero, a complete lighting design must be developed for one or more representative tenant spaces, demonstrating acceptable lighting within the limits of the assumed lighting power allowance.

520.5 HVAC Systems and Equipment. If the HVAC system is not completely specified in the plans, the De-

sign Energy Consumption shall be based on reasonable assumptions about the construction of future HVAC systems and equipment. These assumptions shall be documented so that future HVAC systems and equipment may be in compliance with these standards.

**§ 434.521 The simulation tool.**

521.1 Annual energy consumption shall be simulated with a multi-zone, 8760 hours per year building energy model. The model shall account for:

521.1.1 The dynamic heat transfer of the building envelope such as solar and internal gains;

521.1.2 Equipment efficiencies as a function of load and climate;

521.1.3 Lighting and HVAC system controls and distribution systems by simulating the whole building;

521.1.4 The operating schedule of the building including night setback during various times of the year; and

521.1.5 Energy consumption information at a level necessary to determine the Energy Cost Budget and Design Energy Cost through the appropriate utility rate schedules.

521.1.6 While the simulation tool should simulate an entire year on an hour by hour basis (8760 hours), programs that approximate this dynamic analysis procedure and provide equivalent results are acceptable.

521.1.7 Simulation tools shall be selected for their ability to simulate accurately the relevant features of the building in question, as shown in the tool's documentation. For example, a single-zone model shall not be used to simulate a large, multi-zone building, and a steady-state model such as the degree-day method shall not be used to simulate buildings when equipment efficiency or performance is significantly